

PxxxxLA Series

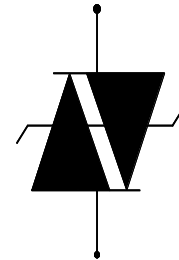
Thyristors Solid Protection Device Bidirectional transient voltage suppressors

Features

- For surface mounted applications to optimize board space
- Low profile package
- Bidirectional crowbar protection
- Low leakage current : I = 5uA max
- Low on-state voltage
- Low Capacitance
- Response Time is < 1us
- YD/T 950 IEC 61000-4-5
- YD/T 993 ITU K.20/21
- YD/T 1082 TIA-968-A
- GR 1089 Intra-building
- Solid-state silicon technology
- Meets MSL 1 Requirements
- ROHS compliant
- WeiPan technology



DO-15



Schematic Diagram

Ordering Information

| Device | Qty per Reel | Reel Size |
|---------|--------------|-----------|
| PxxxxLA | 4000 | 13 Inch |
| PxxxxLA | 2000 | T/R |

Maximum Ratings and Electrical Characteristics

| Symbol | Parameter | Value | Unit |
|------------------|-----------------------------------|-------------|------|
| I _{PP} | Non-repetitive peak pulse current | 10/1000 us | 45 |
| | | 5/310 us | 50 |
| | | 8/20 us | 150 |
| V _{PP} | Non-repetitive peak pulse voltage | 10/700us | 2000 |
| V _{ESD} | ESD Rating per IEC61000-4-2: | Contact | 8 |
| | | Air | 15 |
| T _s | Storage temperature range | -40 to +150 | °C |
| T _j | Maximum junction temperature | 150 | °C |

Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be affected.

*Other voltages may be available upon request.

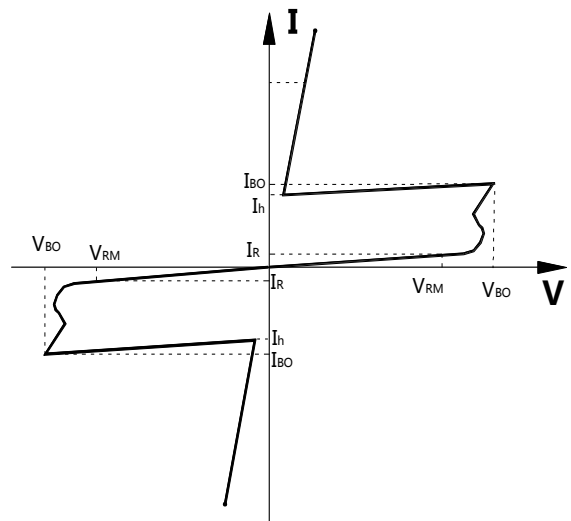
Electrical Parameters ($T_{amb}=25^{\circ}C$)

| Type | V_{RM} | I_{RM} | V_{BO} | I_{BO} | V_T | I_T | C_O | I_H |
|---------|----------|----------|----------|----------|-------|-------|-------|-------|
| | Min. | Max. | | Max. | Max. | | Typ. | Typ. |
| | V | μA | V | mA | V | A | pF | mA |
| P0080LA | 6 | 5 | 25 | 800 | 4 | 2.2 | 85 | 50 |
| P0300LA | 25 | 5 | 40 | 800 | 4 | 2.2 | 85 | 50 |
| P0640LA | 58 | 5 | 77 | 800 | 4 | 2.2 | 60 | 150 |
| P0720LA | 65 | 5 | 88 | 800 | 4 | 2.2 | 60 | 150 |
| P0900LA | 75 | 5 | 98 | 800 | 4 | 2.2 | 55 | 150 |
| P1100LA | 90 | 5 | 130 | 800 | 4 | 2.2 | 55 | 150 |
| P1300LA | 120 | 5 | 160 | 800 | 4 | 2.2 | 55 | 150 |
| P1500LA | 140 | 5 | 180 | 800 | 4 | 2.2 | 60 | 150 |
| P1800LA | 170 | 5 | 220 | 800 | 4 | 2.2 | 60 | 150 |
| P2000LA | 180 | 5 | 220 | 800 | 4 | 2.2 | 60 | 150 |
| P2300LA | 190 | 5 | 260 | 800 | 4 | 2.2 | 55 | 150 |
| P2600LA | 220 | 5 | 300 | 800 | 4 | 2.2 | 50 | 150 |
| P3100LA | 275 | 5 | 350 | 800 | 4 | 2.2 | 45 | 150 |
| P3500LA | 320 | 5 | 400 | 800 | 4 | 2.2 | 40 | 150 |
| P4000LA | 360 | 5 | 460 | 800 | 4 | 2.2 | 40 | 150 |
| P4500LA | 460 | 5 | 540 | 800 | 4 | 2.2 | 40 | 150 |
| P5000LA | 500 | 5 | 600 | 800 | 4 | 2.2 | 40 | 150 |

Notes:

- All measurements are made at an ambient temperature of 25 °C. I_{PP} applies to -40 °C through +85 °C temperature range.
- Off-state capacitance (C_O) is measured at 1 MHz with a 2 V bias and is typical value.

| Symbol | Parameter |
|----------|-----------------------------|
| V_{RM} | Stand-off voltage |
| V_{BR} | Breakdown voltage |
| V_{BO} | Switching Voltage |
| I_{BO} | Breakover current |
| I_{RM} | Leakage current at V_{RM} |
| I_{PP} | Peak pulse current |
| I_H | Holding current |
| V_T | On-state Voltage at I_T |
| C_O | Off-state Capacitance |



Typical electrical characterist applications

Rating and Characteristics Curves

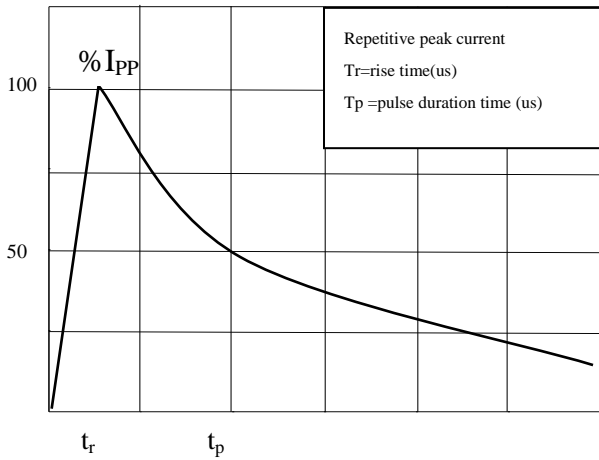


Fig.1 Pulse Waveform (5/310us)

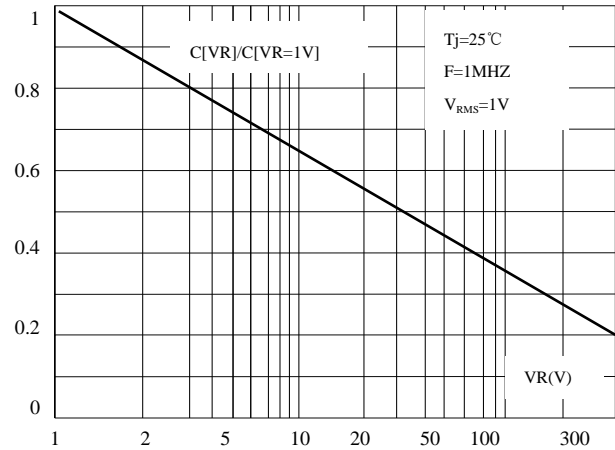


Fig. 2 Relation Variation of Junction Capacitance Versus Reverse Voltage Applied (Typical Values)

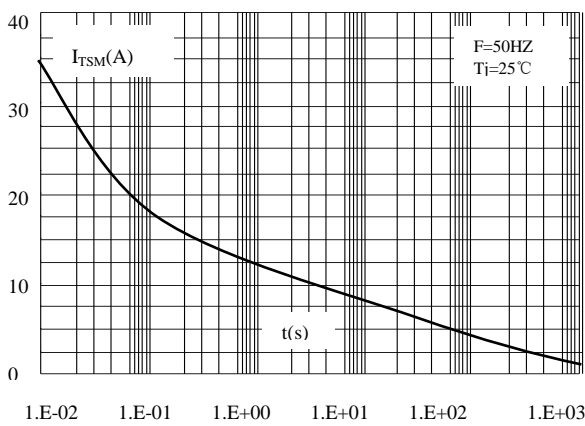


Fig.3 Non Repetitive Surge Peak On-State Current Versus Overload Duration

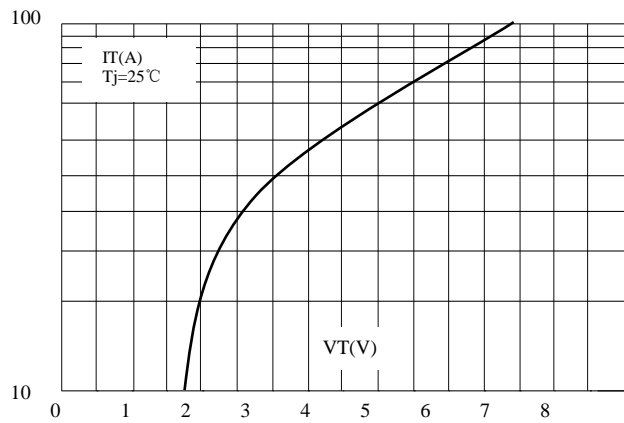


Fig.4 On-State Voltage Versus On-State Current (Typical Values)

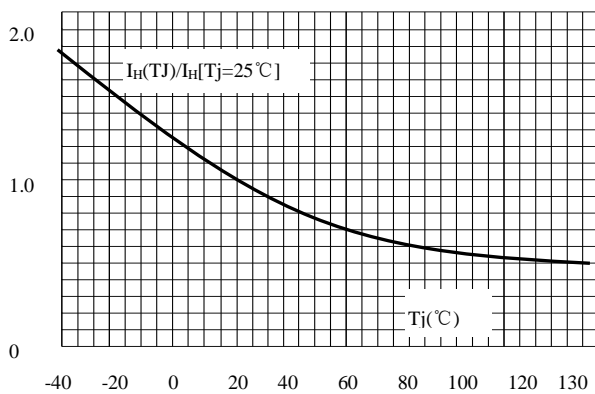


Fig.5 Relative Variation of Hold Current Versus Junction Temperature

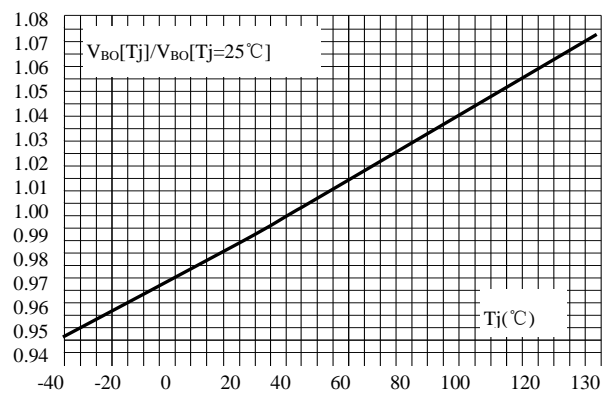


Fig.6 Relative Variation of Break Over Voltage Versus Junction Temperature

Typical electrical characterist applications

Rating and Characteristics Curves

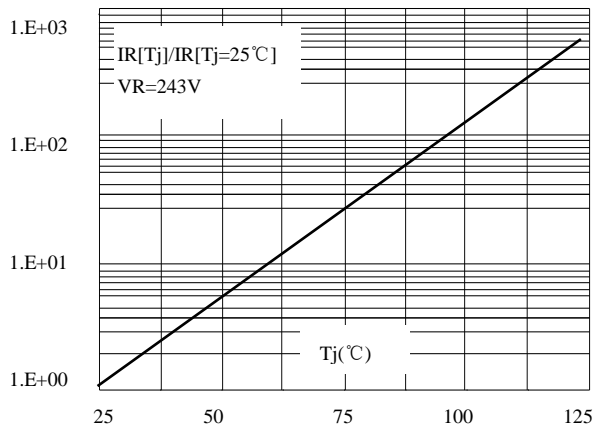


Fig.7 Relative Variation of Leakage Current Versus Reverse Voltage (Typical Values)

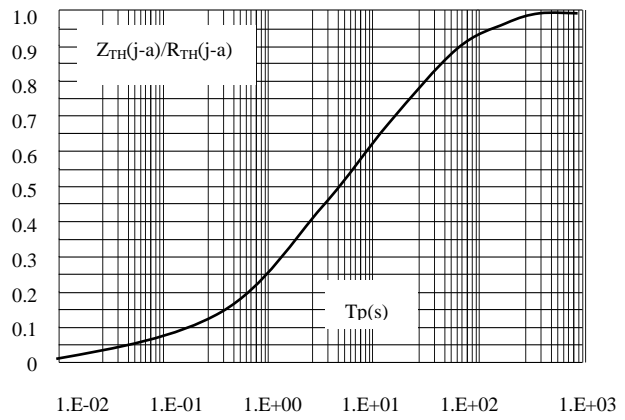


Fig.8 Variation of Thermal Impedance Junction To Ambient Versus Pulse Duration

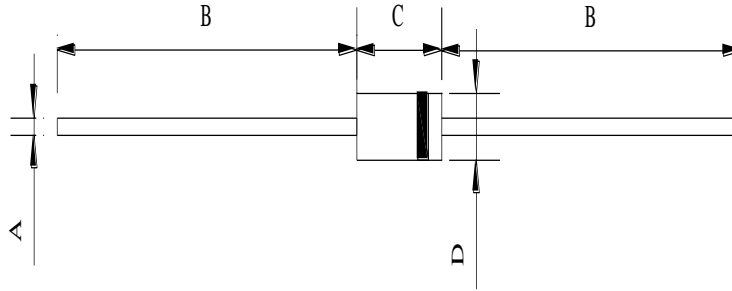
Package information

DO-15

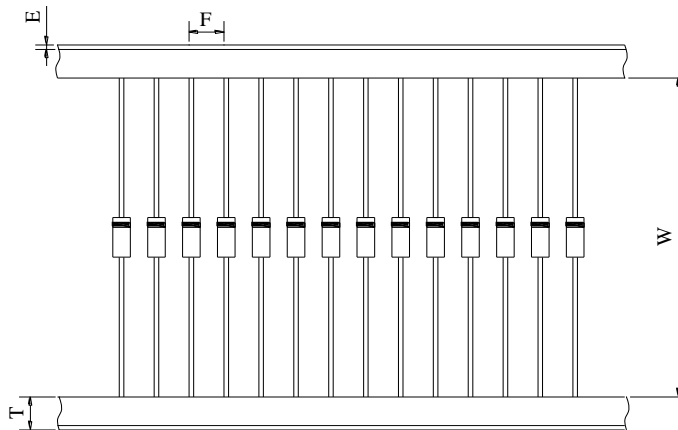
Mechanical Data

- Case: DO-15
- Case Material: Transfer Molded Epoxy. UL Flammability
- Classification Rating 94V-0
- Weight: 0.4 grams (approximate)

DO-15



Axial Lead Taping Specifications



| DMI | Millimeters | | | Inches | | |
|-----|-------------|-------|-------|--------|-------|-------|
| | Min | Nom | Max | Min | Nom | Max |
| A | 0.718 | 0.720 | 0.722 | 0.027 | 0.028 | 0.029 |
| B | | 26.60 | | | 1.047 | |
| C | 6.07 | 6.10 | 6.13 | 0.239 | 0.240 | 0.241 |
| D | 3.27 | 3.30 | 3.33 | 0.129 | 0.130 | 0.131 |
| E | — | 0.8 | — | — | 0.031 | — |
| F | 4.5 | 5.0 | 5.5 | 0.177 | 0.197 | 0.217 |
| T | 5.6 | 6.0 | 6.4 | 0.220 | 0.236 | 0.252 |
| W | 59.1 | 59.3 | 59.5 | 2.327 | 2.335 | 2.343 |